

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/Ala Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-005560**Date Inspected:** 04-Feb-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1845**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 645**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Li Hong Fei, Sun Bo**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower and OBG Components**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector George Goulet was present during the times noted above for observations relative to the work being performed.

Bay 11

This QA Inspector also randomly observed the following work in progress in Bay 11:

FCAW welding of weld joints WSD1-SA298E/G-15 and 16 and WSD1-SA298F/G-7 and 8 located on PCMK west tower, lift 2, skin E. Welders were identified respectively as 067236, 067184, 067103, and 068493. ZPMC QC was identified as Li Hong Fei (QC1). The welding variables recorded by QC1 appeared to comply with the WPS: B-T-2332-Tc-P5-F. Also present at this location and appearing to observe the welding operation was ABF Representative Shen Wen Liang.

This QA inspector observed no ZPMC workers performing any welding on either of the tower shaft assemblies in the back of Bay 11.

Bay 12

FCAW repair welding of weld joint 013 located on PCMK DP585-001. Welder was identified as 062275. ZPMC QC was identified as Sun Bo (QC2). The welding variables recorded by QC2 appeared to comply with the WPS: 345-FCAW-2G-(2F)-repair-1 listed on the document B-WR2121.

Bay 9 - PMT

This QA inspector monitored OBG Production Monitoring Test (PMT) #1 for deck panels DP345-002 and DP289-001 at Gantry #1. Prior to PMT #1, the magnetic particle test (MT) of the tack welds was noted on the test

WELDING INSPECTION REPORT

(Continued Page 2 of 2)

panel as having been performed by ZPMC MT Inspector Xu Hai. The visual inspection of tack welds and root gap was performed by ABF Representative Lv Yun (ABF), QC2, and this QA inspector. The start time for welding of PMT #1 was approximately 0035 hours on Thursday, 2/5/09 and the finish time was approximately 0104 hours. This QA inspector randomly verified and documented the welding amperage, voltage and travel speed during the gas metal arc welding (GMAW) and submerged arc welding (SAW) processes, welds 1 thru 6 at the completion of both the GMAW root pass and SAW cover pass. Of the six approximately 720mm test welds, QC selected and marked the corresponding 500mm area to be designated as the six test welds. The welds were visually inspected by ABF, QC2 and this QA inspector. QC and ABF informed QA Inspector that all six welds were acceptable and QA inspector concurred. This QA inspector randomly witnessed ZPMC Ultrasonic Testing (UT) inspector, identified as Xu Wei, perform UT on each of the 500 mm test welds for depth of penetration and conformance. This QA inspector selected fifteen designated locations for macroetch sampling per contract requirements. Each macroetch location was stamped by ZPMC personnel with the number 289, as well as the letter J, and an individual macroetch identifying number for each macroetch. After removal from each of the weld test specimens and polishing of the selected end, the macroetches were evaluated with a 7X optical comparator and a 10X optical comparator and accepted by QC2, ABF, and this QA Inspector.

All fifteen sample macros appeared to meet requirements and were recorded to appear acceptable by QC2, ABF, and this inspector. See Caltrans U-ribs PMT Inspection Sheet, ZPMC Production Monitoring Test Plate Inspection Report, and Caltrans Macro Etch Logs - all dated 2/5/2009 for additional information.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

Summary of Conversations:

As noted above, and this QA inspector asked both QC's noted above if all the welding variables observed by them appeared to comply with the appropriate WPS, including the preheat and interpass temperature requirements according to thickness of the thickest member being welded. Each QC showed this QA Inspector that he was carrying the appropriate temperature sticks to monitor the minimum and maximum preheat and interpass temperatures and replied that all he observed did appear to comply.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By:	Goulet, George	Quality Assurance Inspector
Reviewed By:	Clifford, William	QA Reviewer
